27. ERROR ANALYSIS *Describe* and correct the error in finding the y-intercept of the line that passes through $(2, 1)$ and is perpendicular to the line $y = -\frac{1}{2}x + 3$.

$y = mx + b$
$2 = 2(1) + b$
$0 = b$

28. TAKS REASONING Which equation represents the line that passes through $(0, 0)$ and is parallel to the line passing through $(2, 3)$ and $(6, 1)$?

Ⓐ $y = \frac{1}{2}x$ Ⓑ $y = -\frac{1}{2}x$ Ⓒ $y = -2x$ Ⓓ $y = 2x$

29. REASONING Is the line through $(4, 3)$ and $(3, -1)$ perpendicular to the line through $(-3, 3)$ and $(1, 2)$? *Justify* your answer using slopes.

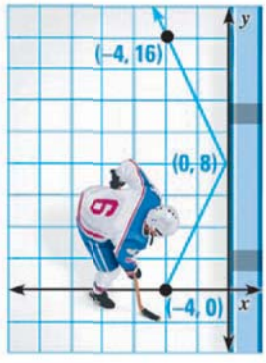
30. TAKS REASONING Write equations of two lines that are parallel. Then write an equation of a line that is perpendicular to those lines.

31. CHALLENGE Write a formula for the slope of a line that is perpendicular to the line through the points (x_1, y_1) and (x_2, y_2).

PROBLEM SOLVING

EXAMPLES 3 and 4 on p. 321 for Exs. 32, 34

32. HOCKEY A hockey puck leaves the blade of a hockey stick, bounces off a wall, and travels in a new direction, as shown.



a. Write an equation that models the path of the puck from the blade of the hockey stick to the wall.

b. Write an equation that models the path of the puck after it bounces off the wall.

c. Does the path of the puck form a right angle? *Justify* your answer.

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33. BIOLOGY While nursing, blue whale calves can gain weight at a rate of 200 pounds per day. Two particular calves weigh 6000 pounds and 6250 pounds at birth.

a. Write equations that model the weight of each calf as a function of the number of days since birth.

b. How much is each calf expected to weigh 30 days after birth?

c. How are the graphs of the equations from part (a) related? *Justify* your answer.

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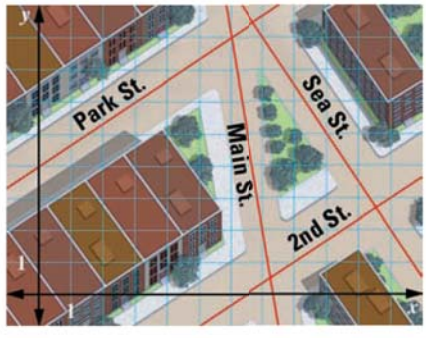
34. TAKS REASONING The map shows several streets in a city. Determine which of the streets, if any, are parallel or perpendicular. *Justify* your answer using slopes.



Park: $3y - 2x = 12$ Main: $y = -6x + 44$

2nd St.: $3y = 2x - 13$ Sea: $2y = -3x + 37$